ABSTRACT OF THE DISCLOSURE

Disclosed is a cross-connect apparatus having n-number of working cross-connects for cross-connecting, on a per-bit basis, n-bit input signals that arrive from respective ones of a plurality of input paths; n-number of first logic circuits for calculating the exclusive-ORs of the n bits of each input signal and applying their outputs to a standby cross-connect; n-number of second logic circuits for calculating the exclusive-ORs of signals output from the n-number of working cross-connects and from the single standby cross-connect; and third logic circuits having a function for selecting output signals of the n-number of working cross-connects and outputs of the second logic circuits. The cross-connects apparatus detects the occurrence of an abnormality in a working cross-connect by monitoring the outputs of the second logic circuits, identifies the faulty cross-connect by successively turning off one input among the n-number of inputs to the first and second logic circuits, and selectively outputs the output signals of the second logic circuits instead of the output signals of the faulty cross-connect by using the third logic circuits.